IN THE CLAIMS

Claims 1-53 (cancelled)

Claim 54 (new): A method of manufacturing a microstructured fibre, comprising:
(i) providing a preform comprising a plurality of elongate holes;
(ii) mating at least one of the holes with an external pressure-controller, and
(iii) drawing the preform into the fibre whilst controlling gas pressure in the hole(s) connected to the pressure-controller.

Claim 55 (new): A method as claimed in claim 54, comprising mating at least one of the holes with a connector to connect the hole(s)to the external pressure-controller.

Claim 56 (new): A method as claimed in claim 54, in which the preform comprises a plurality of elongate elements, arranged side by side in a bundle, a plurality of the elements being tubes, wherein each tube defines one of the holes in the preform.

Claim 57 (new): A method as claimed in claim 54, in which the preform comprises a matrix material that defines the holes.

Claim 58 (new): A method as claimed in claim 54, in which the external pressure-controller increases the pressure in the hole above atmospheric pressure.

Claim 59 (new): A method as claimed in claim 54, in which the external pressure-controller decreases the pressure in the hole below atmospheric pressure.

Claim 60 (new): A method as claimed in claim 54, in which the

pressure in the hole is kept constant throughout the drawing of the fibre.

Claim 61 (new): A method as claimed in claim 54, in which the pressure in the hole is varied during the draw.

Claim 62 (new): A method as claimed in claim 61, in which the pressure is pulsed periodically.

Claim 63 (new): A method as claimed in claim 54, in which a plurality of the holes are connected to the external pressure-controller.

Claim 64 (new): A method as claimed in claim 54, the method including the step of pressurising further groups, each comprising at least one of the holes, to a second pressure or additional pressures.

Claim 65 (new): A method as claimed in claim 54, the method including the step of varying over time the rate at which the fibre is drawn from the preform.

Claim 66 (new): A method as claimed in claim 54, the method including the step of varying over time the preform feed rate.

Claim 67 (new): A method as claimed in claim 54, the method including the step of varying over time the furnace temperature.

Claim 68 (new): A method as claimed in claim 54, in which the pressurisation results in at least one elongate hole formed in the drawn fibre having a different transverse area in one part of the fibre from its transverse area in another part of the fibre.

Claim 69 (new): A method as claimed in claim 54, in which the pressurisation results in at least one part of the dielectric matrix region having a different transverse area in one-part of the fibre from its transverse area in another part of the fibre.

Claim 70 (new): A method as claimed in claim 59, in which at least one hole is completely collapsed over a length of the fibre.

Claim 71 (new): A method as claimed in claim 54, in which the pressurisation results, in a transverse cross-section of the drawn fibre, in a plurality of concentric regions, wherein alternate adjacent regions are of a higher and a lower effective refractive index respectively.

Claim 72 (new): A method as claimed in claim 54, in which the pressurisation results in the drawn fibre being a W-profile fibre over at least part of its length.

Claim 73 (new): A method as claimed in claim 54, the method including the step of producing a plurality of devices arranged axially along the PCF by varying over time the pressure applied to the hole or holes.

Claim 74 (new): A method as claimed in claim 54, in which the pressurisation results in the drawn fibre comprising a long period grating.

Claim 75 (new): A method as claimed in claim 54, in which the variation in pressurisation results in a change in the symmetry of the fibre, such that a portion of the fibre is birefringent.

Claim 76 (new): A method as claimed in claim 55, in which two portions of the fibre are birefringent and their principal

polarisation axes are rotated relative to each other by the variation in pressurisation.

Claim 77 (new): A method as claimed in claim 56, in which the distribution of pressure in the holes is altered part-way through the draw so as to make the slow axis into a fast axis and vice-versa.

Claim 78 (new): A method as claimed in claim 76, in which, further portions of the fibre may be birefringent and have rotated polarisations.

Claim 79 (new): A method as claimed in claim 54, in which the variation in pressurisation results in a change in core size in the drawn fibre, such that the fibre comprises a fibre portion having a larger core region and a fibre portion having a smaller core region.

Claim 80 (new): A method as claimed in claim 54, in which the variation in pressurisation results in a change in core size, such that the fibre comprises a nonlinear fibre portion, comprising a core region that is sufficiently small for significant nonlinear optical effects to occur in use.

Claim 81 (new): A method as claimed in claim 54, in which the drawn fibre comprises a plurality of core regions.

Claim 82 (new): A method as claimed in claim 81, in which the variation results in the separation of at least two of the cores being reduced in a region of the fibre, such that the fibre comprises an optical coupler comprising the reduced separation region.

Claim 83 (new): A method as claimed in claim 82, in which the fibre comprises two such optical couplers that form a Mach-Zehnder interferometer.

Claim 84 (new): A method as claimed in claim 82, in which the fibre comprises a network of switches and/or filters formed from a plurality of such couplers.

Claim 85 (new): A method as claimed in claim 81, in which the fibre comprises more than two cores.

Claim 86 (new): A method as claimed in claim 85, in which the variation results in the separations of the cores being reduced over a plurality of portions of the fibre to form optical couplers between each of the more than two cores.

Claim 87 (new): A method as claimed in claim 54, in which a transition region formed between each of a plurality of optical devices formed in the fibre is sufficiently gradual to be adiabatic.

Claim 88 (new): A method as claimed in claim 54, in which the condition of the draw is oscillated between two states over time to form a transition region, the first state being matched to the mode of a first optical device comprised within the fibre and the second state being matched to the mode of a second of optical device comprised within the fibre.

Claim 89 (new): A method as claimed in claim 54, the method includes the step of manufacturing twist-compensated DGD-free fibre by oscillating the structure to and fro periodically along the length of the drawn fibre.

Claim 90 (new): A method as claimed in claim 54, in which the pressure is oscillated during the draw to avoid unwanted nonlinear effects by oscillating the fibre structure around a desired structure that satisfies an unwanted phase-matching condition.

Claim 91 (new): A method as claimed in claim 54, in which the method includes the step of producing a DCF with graded properties that match the dispersion curve in standard telecomms fibre over the telecommunications bands.

Claim 92 (new): A method as claimed in claim 54, in which the method includes the step of calibrating the relationship between parameters of the draw and parameters of the drawn fibre.

Claim 93 (new): A method as claimed in claim 92, in which the method further comprises varying parameters of the draw according to the calibration results to produce a fibre having a selected structure.

Claim 94 (new): A method as claimed in claim 54, in which the pressure applied to the or each hole is controlled by a digital signal.

Claim 95 (new): A method as claimed in claim 54, in which a portion of the preform is retained undrawn during the drawing of the fibre, and individual connections are made directly, for example via a hose, from one or more external pressurecontrollers to each hole or holes to be pressurised by that pressure-controller.

Claim 96 (new): A method as claimed in claim 54, in which a connector is provided to connect the holes to the external pressure-controller.

Claim 97 (new): A connector for connecting a preform, which is for a microstructured fibre and which comprises a plurality of holes, to a pressure source, the connector comprising a plurality of elements arranged to mate with one or more of the holes, each element being connectable to a pressure source.

Claim 98 (new): A connector as claimed in claim 97, in which different ones of the elements are connectable, individually or in groups, to different pressure sources.

Claim 99 (new): A connector as claimed in claim 97, in which the preform comprises a plurality of tubes and the elements are chambers in which one or more of the tubes terminate.

Claim 100 (new): A connector as claimed in claim 59, in which each chamber is in fluid communication with a passage that is connectable to the pressure source.

Claim 101 (new): A connector as claimed in claim 99, in which the chambers are distributed in the connector in a plane substantially orthogonal to the direction in which the tubes are intended to pass through the apertures.

Claim 102 (new): A connector as claimed in claim 101, in which the chambers are adjacent to the apertures.

Claim 103 (new): A connector as claimed in claim 102, in which the chambers are recesses in a side of the connector.

Claim 104 (new): A connector as claimed in claim 97, in which the chambers are distributed in the connector along the direction in which the tubes are intended to pass through the aperture.

Claim 105 (new): A method as claimed in claim 54, further comprising the step of mating a connector for connecting a preform, which is for a microstructured fibre and which comprises a plurality of holes, to a pressure source, the connector comprising a plurality of elements arranged to mate with one or more of the holes, each element being connectable to a pressure source with an end of the preform such that the elements of the connector mate with at least some of the holes, connecting the elements to one or more external pressure-controllers and pressuring the holes to one or more selected pressure during the draw.

Claim 106 (new): A method of manufacturing a microstructured optical waveguide, comprising: (i) providing a preform in which there are a plurality of holes running side-by-side through the preform; (ii) coupling a pressure-controller to one or more, but not all, of the holes for controlling the gas pressure in those holes; (iii) drawing the preform into an optical waveguide while controlling the gas pressure in the holes that are coupled to the pressure-controller.

Claim 107 (new): A fibre made by a method according to claim 54.